DOCUMENT RESUME

ED 289 972 CE 049 048

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TITLE New Educational Policy to Confront the Challenges of Technological Change in Egypt.
PUB DATE Jul 87
NOTE 23p.; Paper presented at the World Assembly of the ICET (34th, Eindhoven, The Netherlands, July 20-24, 1987).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Descriptive (141)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Articulation (Education); *Change Strategies; *Educational Change; *Educational Policy; Foreign Countries; Nontraditional Education; Policy Formation; Position Papers; Postsecondary Education; *Program Improvement; Secondary Education; *Technical Education; *Technological Advancement
IDENTIFIERS *Egypt

ABSTRACT

Egypt's educational system has divided its attention among a series of humanistic, social, and economic goals. Recently, however, the increasingly rapid pace of technological change within the country has caused Egyptian educational policymakers to place greater emphasis on reforming and updating its technical education system. The approach to reform that has been adopted includes the following: study of a more flexible type of education that is better able to respond to society's needs; establishment of open communication channels between technical and higher education; development of a specialized system to conduct research on occupations that should be emphasized in technical education programs, emerging occupations, and the long-range needs of Egypt's production and service sectors; establishment of experimental schools for technical education below the university level; and identification of the scientific and skill levels that must be achieved through technical education. The following have been identified as the initial steps that need to be taken to improve technical education in Egypt: expansion of technical education to a five-year system, construction of increased numbers of technical schools in collaboration with the production and service sectors, and coordination with the production and service sectors to continue students' training through their annual vacations (participation in such vacation programs being a graduation requirement). (MN)

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ICET THIRTY-FOURTH WORLD ASSEMBLY
JULY 20-24 , I987
EINDHOVEN, THE NETHERLANDS

NEW EDUCATIONAL POLICY TO CONFRONT THE CHALLENGES OF TECHNOLOGICAL CHANGE IN EGYPT

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Some important principles drawn from this study are the following :

First: The natural approach to the reform of technical education is :

I. The study of a certain flexible type of education which is able to respond to society needs .

2. To open communication channels between technical education and higher education.

3. The availability of a specialized system to conduct research whose aim is defining the following:
   (a) Basic vocations on which the focus should be.
   (b) Future vocations to be prepared for.
   (c) The needs of production and services sectors as regards technicians through several 5-year plans.

4. Establishment of experimental schools for technical education preliminary to universities.

5. The necessity of determining the scientific and skill levels which have to be achieved through technical education.

Second: The initial steps to be taken for the development of technical education:

I. Expansion in technical education, 5-year system, to provide the satisfactory quality of technicians.

2. Expansion in the construction of technical schools in collaboration with production and services sectors.

3. Coordination with production and services sectors for the training of students through their annual vacations. This actual practice on the productive process in the production areas is a condition for graduation.

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NEW EDUCATIONAL POLICY TO CONFRONT THE CHALLENGES OF TECHNOLOGICAL CHANGE IN EGYPT

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The goals of the new educational policy in Egypt reveal the increasing interest in technical education. The rapid rate of scientific discoveries and technological progress is a real challenge for developing countries. The development of these societies and their ability to confront present and future challenges depend on their potentialities to provide sufficient expertise and skills for the production process.

Technical education is considered the principal source of manpower necessary for the needs of the changing society. Hence, it is inevitable to provide sufficient qualified teachers, administrators and other education personnel. Recently, the Higher Committee For Technical Education has postulated a new conception of technical education and proposed the essential principles for its reform.

Several programs have been implemented for the uprising of the professional efficiency level of teachers and other education personnel. An important program is the development of the National Center For Educational Research. Some programs are supported by foreign relations co-ordination. These programs are responsible for the implementation of projects directed toward developing applied research on development areas of high priority for Egypt, and toward solving problems of Egyptian development. These programs have been incorporated into a complete, systematic and integrated pattern.

NEW EDUCATIONAL POLICY TO CONFRONT THE CHALLENGES OF TECHNOLOGICAL CHANGE IN EGYPT

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INTRODUCTION:

The rapid rate of scientific discoveries and technological progress is a real challenge to developing countries. The development of these societies and their ability to confront present and future challenges depend on their potentialities to provide sufficient expertise and skills for the production process. The vital need of these societies for development and progress necessitates this confrontation. Hence arises a broad and increasing interest in the various fields of technical education: agricultural, commercial and industrial. This is a prominent feature of the new educational policy in Egypt. Consequently, the Higher Committee For Technical Education has postulated a new conception of technical education and proposed the essential bases and principles for its reform.

Goals of the General Strategy of Education in Egypt:

Education in Egypt aims at the realization of three kinds of general strategic goals:

- Humanistic Goals: related to the human individual and the realization of individual humanity.

- Social Goals: related to the society and the realization of its stability and development including its systems and institutions.

- Economic Goals: the provision of highly efficient manpower to satisfy the society needs for the world of work in the vocational, technological and apprenticeship fields.

Goals of the Educational Policy:

The goals of the new educational policy arise from the general strategy of education. This strategy puts into consideration the different variables and changes that face the Egyptian society. Meantime, it includes the expectations of the future due to the universal changes and events occuring in the whole world and their subsequent consequences on the Egyptian society.

The general policy goals could be summarized as follows:

- Gradual increase of the potentialities of the educational system to provide equal opportunities for all Egyptians. This realizes a basic human need.

- Achieving a balance among the different kinds of secondary stage education, i.e., general and technical education. This balance provides students of different specialization areas needed either for the higher education stage, or for various work fields in life, such as industry, agriculture and commerce.

- Uprising the level of educational services offered to students. This includes the various aspects of educational services and realizes a complete and integrated development in an accepted social pattern.

- Supporting and developing the local educational boards responsible for the implementation of the educational process. This support reinforces the decentralization system of the state.

- Encouraging private efforts in various regions to collaborate with the state in educational projects.

Education Personnel Development Programs:

These programs have been designed in accordance with the bases and principles of the educational policy in Egypt which could be summarized as follows:

- Education is one of the most influential and important approaches to assure human rights. The Egyptian constitution states that education is the right of all Egyptians fostered by the state and is considered as one of the essential needs for every individual in the society.

- According to the constitution, education is free in all its stages to realize social justice, to provide equivalent opportunities, to offer educational services for all individuals and to bridge the economic and cultural gap among the inhabitants, and between urban and rural environments.

- Disseminating expanding education as a means of establishing strengthening democratic principles. This includes the development of a democratic personality that protects the public welfare, and is aware of its rights and duties.

- Education is the principal source for expertise and skills necessary for the production process in various fields and for the activities of investment and development. Education is a high quality system for producing competent technical, scientific and administrative personnel.

- The development of education is a continuing process which may be fast or slow according to the rate of change in the society.

- The development of education in the Egyptian society is not isolated from the variables occurring in a rapidly changing, dynamic world.

- Education does not only deal with the present but also prepares people to live in the future.

Implementation Of Programs:

The realization of the educational policy goals necessitates the implementation of several programs . These programs deal with the development of education in Egypt, taking into consideration its various aspects, within a complete systematic and integrated framework.

Basic Education :

One of the goals is the realization of compulsory and free education for all Egyptian children of age six through a period of nine school years. This is the Basic Education Stage which comprises two levels:
a) the primary level which extends for six years starting with six-year -old children;
b) the preparatory level which follows the primary stage and extends for three years.

The primary level of basic education stage comprises six million pupils approximately during the school year I984/85, while the second level of the basic education stage comprises two millions pupils during the same school year.

In addition to the first stage of education (basic education), the state's educational policy aims at increasing the capacity of schools of the second stage of education (secondary education) to accept more students, especially in the industrial and agricultural secondary schools to meet the society's need for competent workmen.

To realize this goal two programs have been implemented:

Program I : School Building Program:

Three financial resources for supporting the school building program:

- Private efforts;
- Foreign aids: US AID to support Basic Education;
- State's financial resources.

Program II: Provision of School Teachers:

Ministry of Education conducted a study to determine school needs for teachers until the year 2000. The preparation of those teachers of different specializations for the various stages of education necessitates the collaboration with faculties of education. This coordination includes planning of admission policy for future in these faculties and the distribution of the fresh accepted applicants to different departments according to specialization areas needed (effective I985/86).

Teaching Efficiency:

Program III: Uprising the efficiency level of teachers:

This program is one of the most important activities in the development process of education. The education policy assures the significance of both teachers' preparation and their later professional life. This necessitates the development of programs designed for pre-service preparation of teachers and for continuing professional development of inservice teachers.

This program includes training, guidance and supervision, as well as the development of follow-up activities necessary for proper implementation and for the realization of educational goals. This program is implemented as follows:

I. Unification of Teachers' Preparation Sources:

These sources differ in their level of graduation. Teachers of the secondary stage of education are graduates of the university. Faculties of education are the principal source of those teachers. Mostly, teachers of primary schools are non-graduates. Ministry of education aims at unifying the source of teachers' preparation. It has started some practical steps to update and uprise the level of nongraduate teachers to the university level.

2. Training of Inservice Teachers:

In 1983, Ministry of Education with the collaboration of faculties of education in Egypt have started to use " Distance Learning " for the training of non-graduate inservice teachers of primary schools. This program represents an open university whose function is the training of a total of 140000 inservice teachers and uprising their efficiency to the university level through a period of 10 years.

The program uses multi-communication media, including television daily programs, to enable the trainees to receive the essential knowledge and guidance during their meetings in training centers.

Several training centers are scattered in different parts in Egypt where educational activities take place under the supervision of university staff members.

The program consists of a four-year course of different specialization areas, e.g., Science and Arts. Successful participants attain B.Sc. or B.A. degree in Basic Education. Hence, the program raises the level of the teacher's professional efficiency and enhances his social status. After the graduation of the I40'000 inservice teachers enrolled in this program, the university degree (B.Sc. or B.A. Basic Education) will be a strict provision for the assignment as primary school teachers.

Another useful function of Distance Learning programs is evident in the field of 'literacy training' for adult basic education. It is, also, useful in the field of technical education.

3. Developing and updating the systems of training, guidance, supervision and school administration.

4. Solving Teachers' Problems:

To realize the development of teachers' professional, financial,and social conditions, a special committee has been established to study these conditions and to solve teachers' problems. The committee consists of representatives of Ministry of Education, Teachers Union and of the Central System of Organization and Administration . Solving the problems of teachers and enhancing their economic and professional status improve immensely their performance in the educational process.

5. New system for delegations and private vacations of teachers :

Ministry of Education has set up new encouraging rules to organize teachers' private vacations and delegations to other countries. These new rules give more opportunities to teachers for getting personal contracts to work in foreign countries. If these contracts are financially rewarding and improve the social and the economic conditions of teachers, the teaching profession will become more attractive.

Program IV : Establishment of a proper educational climate :

To realize this aim the following program has been implemented:

I. The interaction between planners and executives: This aims at finding a kind of common understanding of educational concepts, Ministry decisions, styles of performance, various obstacles and ways of overcoming them. This common understanding achieves discipline in school work, and establishes a kind of familiarity among education personnel.

Periodical meetings and panels for discussing these issues help achieve a general ideological pattern and a clear philosophy consistent with the state's educational policy. This activity results in a smooth gradual development of education as a social change process, something which is intended in most of its aspects.

2. Provision of a stable, calm atmosphere in schools and in educational administrations:

Educational policy focuses on this aim so that all education personnel would perceive their duties and rights

avoiding conflicts, tensions or anxiety. Industry and commitment are two essential traits for any successful work and for any normal development.

3. The change of the organizational structure of the educational administrations, and defining clearly the personnel roles and their interrelations without any complexity or authoritarianism.

Program V : Curriculum Development :

In order to achieve the desired educational goals in accordance with the general educational policy, several school curriculum committees have been formed. These committees comprise representatives of all universities, teachers' colleges, Ministry of Education, National Center for Educational Research and other specialists from various production and services sectors. Furthermore, these committees comprise international experts in this field as well as other public personalities who are interested in educational issues.

These permanent committees are responsible for the re-evaluation of current school curricula to find out how far it is suitable for the society's conditions and actual needs. Re-evaluation is followed by the revision and development of these curricula. For technical education alone 28 permanent committees have been formed for the revision of current curricula: seven committees for agricultural education; five committees for commercial education and sixteen committees for industrial education.

To secure the realization of the general philosophy and policy of the development process, the Board of Supreme

Policies for School Curricula follows up the work of the various specialized committees to realize the desired integration.

Program VI : Development of technical education :

There is a wide, increasing interest in technical education. This is due to the belief that the nature of the development of societies is influenced by the rapid rate of scientific discoveries and creative technology as well as by the extent of its usages in our life. Hence, the progress of society and its ability to face the present and future challenges of technological change depend on the potentialities of the society to provide sufficient, competent specialists in science and technology.

Consequently, technical education should be able to respond to the emerging needs of each stage of development. Successful technical education is able to meet the growing needs of the changing society. Technical education is a main sourse of the preparation of manpower. Due to Egypt's awareness of the vital role of technical education in facing the present and future challenges, a higher committee for technical education has been formed in addition to the above mentioned 28 specialized committees for industrial, agricultural and commercial education.

The Higher Committee for Technical Education is responsible for research in this kind of education and its development in order to meet the needs of the society. According to the results of the research, this committee put forward in I984 a new concept of technical education and proposed the essential principles necessary for its reform.

4. Carrying out follow-up studies helps determine the strong and weak points in the graduates' preparation. Moreover, it provides the suitable means for the improvement of the preparation process.

Third: Teacher preparation is the principal process in the realization of any development of technical education. The present means for teacher preparation are unsuitable for the existing aspirations to develop technical education. It is inevitable to study the useful methods of preparation, services, promotions, salaries and training in order to motivate the efficient individuals in this field to be loyal and devoted to their work. Training, solely, is not sufficient as a criterion for selection. The successful candidate should satisfy other conditions for selection.

Fourth: The physical demands of technical education, which exceed the demands of general education, require joint-coordination between the state's systems and the sectors of production and services to provide these demands.

Achieving a balance among various kinds of secondary education

To support the development of technical education and the continuity of expansion in technical schools, it is necessary to secure the continuous flow of students to be admitted to these schools. The natural source of these students is Basic Education, i.e., the first stage of education. This stage of

education, which extends for 9 years, is compulsory for all Egyptian children. It is the individual's right in education as well as the society's right in securing tenacity, conservation of its structure, norms and stability.

The second stage of education is the secondary education. This stage extends for 3 years and has three channels: general, technical,and moderate institutes for teachers' preparation. Education,in this stage as well as in the first stage, is free. This is related to the society's right to invest secondary school graduates in all fields which need human energy. Therefore, the society has the right to direct students who finish basic education to the kind of secondary education which satisfies its needs.

Ministry of education aims at achieving a sort of balance among various kinds of secondary education according to the needs of society which are shown in the educational plan. According to the policy of admission to the secondary stage of education, Ministry of education put a plan to be continued until the year 2000. The plan aims at increasing the percentage of admission to technical secondary education up to 65% at least, meantime, decreasing the percentage of admission to general secondary education to 30 %. The remaining 5 % will be directed to vocational training centers and other kinds of education.

Within technical education, expansion in industrial education will be increased to the maximum limit. While, with regard to commerce schools no expansion will occur. Moreover, I00 commerce education classes have already been

converted to industry education classes in I984/85. The education plan have considered the expected percentages for admission to the various branches of technical education till the year 2000.

Program VII: The Development of the National Center for Educational Research.

The Ministry of Education believes that the development of education in society is a continious process. Meantime, any attempt to attain development in educational work without taking into consideration its continuity would be a futile attempt. One of the most essential conditions for the continuity of educational development, one which ensures its occurence, is the existence of a responsible system to follow up the occuring development and to evaluate the innovated educational services. This requires a system of high scientific and technical efficiency as well as a competence in research.

This program , therefore, aims at supporting the National Center for Educational Research which should be responsible for reviewing the scientific thought in this field,evaluating, developing and conducting research in the various kinds of education including technical education. The program includes financial support that enables the center to take practical steps for raising the level of performance, and to overcome the obstacles that hinder the realization of the center's goals.

This is followed by the establishment of several branches of the National Center for Educational Research in other governorates, where there are faculties of education. This ensures the collaboration between these faculties, the educational administrations and the National Center for Educational Research.

Foreign Relations Co-ordination:

Several projects agreements are based on foreign relations coordination. Most important of these projects are the following:

I. The University Linkages Projects (ULP):
Grants awarded by authority of the Project Agreement between Egypt and U.S.A. for University Linkages (effective I980). The Foreign Relations Coordination Unit (FRCU) of the Supreme Council of Universities (SCU) is responsible for the implementation of the University Linkages Project.

The ULP is designed to engage Egyptian University faculty members in applied research relevant to Egyptian development. It is a joint Egyptian-United States activity. It supports problem solving research focused on development areas of high priority for Egypt and on building the capacity of Egyptian Universities to conduct research. Through the award of grants, it finances research and capacity building projects to be carried on jointly by Egyptian and U.S.A. Universities.

The principal branches of the project are:

a. Technical Services Branch: Coordinates the generation, submission and evaluation of proposals, the award of grants, and the monitoring of project performance;

b. Information Services Branch: Coordinates the collection, storage, retrieval and dissemination of scientific technical information;

c. Computer Center: Plans and manages the use of information and communication technologies for FRCU and provides computational services;

d. Financial Services Branch;

e. Procurement Services Branch.

The Capacity Building Program:

The capacity building program is designed to increase the capacity of the university and its faculty members. The priority fields of applied research which have been selected as the most important for Egypt's development are:

- Activities related to improving scientific and technical facilities in the centers of research excellence in Egyptian universities.

- Efforts leading to increased Egyptian university services for scientific and technical information, and to exchange with American universities.

- Joint conferences, seminars and research workshops that bring Egyptian and American scientists togother. These activities are to be aimed at identifying specific areas of applied research that could be conducted if capacities were greater, or identifying needs for related equipment or training.

- Other activities leading to increasing the capacity of Egyptian universities to formulate and conduct research related to solving developmental problems within the above domain.

The basic premise of the capacity Building grant program is that the selection of activities will be the function of the individual universities, determined by their assessment of the priority capacity building requirements related to prospective Universty Linkage activities. Thus, the fundamental aim of the FRCU review process is to assure the relevancy of capacity building grant proposals.

The FRCU encourages multi-disciplinary projects which may cover more than one priority field. In fact, maxi-linkages are expected to relate to more than one field.

Priority Areas for Egyptian Development:

Priority areas reflecting priorities for Egyptian Development have been established by the FRCU. These areas include:

- Agriculture and Food Production: Plant and animal production, food technology and sanitation, agricultural engineering, agricultural economics and extention;
- Energy: Production, economics, distribution, technology, management, conservation, and non-conventional sourses;
- Economic Polices: Growth, income distribution, trade, investment and prices.
- Land Development and Desert Technologhy: Irrigation and drainage, land reclamation techniques, farm management, desertification, forestry, crop technologies for desert agriculture, adaptation of technology for desert development, human and animal development in desert;
- Industry: Idustrial engineering, industrial management, public and private sector policies, industrial technology, agro-industry;
- Infrastructure: Policy, planning and standards, housing and construction technology, building materials, transport engineering, transport policy, communication engineering;
- Environmental Studies: Air and water pollution, noise pollution, standards for a clean environment;
- Applied Sciences: Applied geological studies, biophysics, micro-biology, solid state studies and interdisciplinary studies using new technologies.

The FRCU may from time to time change these priorities in accordance with Egytian development needs.

II. Joint Egyptian-United States Training Projects:

The Commission For Educational & Cultural Exchange between U.S.A. & Egypt has signed an agreement between both countries to implement a 5-year Training Plan for different specializations in various technical fields such as industry and agriculture. This promising plan aims at achieving a great development in all joint Egyptian-United States training projects to realize the relevance of the education personnel training to manpower development needs in various areas of development in Egypt. The implementation of the agreement is in accordance with the USAID regulations. (effective July 1987)

The programs included in the agreement assure the continuing efforts to prepare and develop well-qualified experts and personnel suitable for confronting the challenges of technological change in the Egyptian society. The major programs are:

- The establishment of a complete Training Center in the region of Serse Ellayan for the training of university staff-members of different faculties who teach their subjects in English : Faculties of medicine, engineering, science and pharmachology. Also, the center aims at developing the English language for those members who have got grants from the Peace Grant Project and for those personnel belonging to the projects of the Binational Fulbright Commission. The English Teacher Training Program (ETTP) and the Program of English for Specific Purposes (ESP) have prominent roles in these activities.

- Increasing the efficiency of teachers enrolled in Ministry of Education and developing all teachers' training centers in Egypt.

- The establishment of a center for the development of administeration leaders.

Conclusion:

Finally, Egypt's new educational policy believes in the necessity of establishing an efficient system of education as a means of changing the society. The new strategy strives for a high quality system of education which can develop in pre-university students the competence required to function successfully either in the next academic level or in the occupational level in a developed technological society.

This system assures equal educational opportunities for all Egyptian students, as regards the admission policy and educational services with no prejudice or discrimination. It provides for a high quality curricular programs, well-trained administrators, efficient school personnel, sufficient supplies and facilities. These enable the students to acquire knowledge and skills; to promote problem-solving ability and creative thinking; and to develop proper attitude in order to achieve the required standards of performance for developing a productive society and for confronting the challenges of technological change in Egypt.

The new educational policy is aware of the necessity of the flexibility of the educational system and of the innovations of programs to meet technological innovations. This ensures continuous development. Education development, including professional development of educational personnel, is a comprehensive and continuous process which assures consistency with the rapid rate of world-wide scientific and technological progress.

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